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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,418

03/30/2004

Kerstin Mothes

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71325 7590 09/10/2008  
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EXAMINER

SMITH, BRADLEY

ART UNIT

PAPER NUMBER

2894

NOTIFICATION DATE

DELIVERY MODE

09/10/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docketing@eschweilerlaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/812,418	<b>Applicant(s)</b> MOTHES ET AL.	
	<b>Examiner</b> Bradley K. Smith	<b>Art Unit</b> 2894	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 8/20/08.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Vassiliev et al. (US 6,180,490).

Regarding claim 1, Vassiliev et al. disclose forming a mask (6) on a substrate(2); forming at least one trench (8) in the substrate by using the mask; in the presence of the mask, selectively depositing a first insulation material (11) only in the trench and not on the mask to fill (The examiner would like to point out that the specification filed on 11/22/05 disclose that “An example of a selective oxide deposition process of this type is an ozone TEOS process with a high process pressure and a high ozone content. In this case, scarcely any oxide grows on the nitride mask 3.” (page 6 lines 8 and 11), as working example of "the oxide deposition material is grown selectively only in the trenches 2 on the silicon of the substrate 1 but not on the nitride of the mask 3" (page 6 lines 4-6). Ergo the examiner understands that "not on the mask" can mean "scarcely any".) a lower part of the at least one trench in the substrate with the insulation material reducing the aspect ratio of the at least one trench (figure 3, column 7 lines 32-60) (more insulation material is deposited at the bottom than on the side of the trench, therefore reducing the aspect ratio); and applying a second insulation material (15) over an entire surface of the structure to fill the at least one trench in the substrate at least up to a top side of the mask (figure

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7b). Regarding claim 2, Vassiliev et al. disclose the substrate is made from silicon, the mask is made from silicon nitride (6) (figure 3) and the first and second insulation materials are formed from silicon oxide (abstract). Regarding claim 3, Vassiliev et al. disclose after the selective deposition a conditioning process is carried out to compact (densify) the first insulation material (column 8 lines 5-6). Regarding claim 4, Vassiliev et al. disclose the second insulation material is applied by an HDP process (column 8 lines 8-9). Regarding claim 5, Vassiliev et al. disclose the second insulation material is planarized by chemical mechanical polishing on the mask (see claim 1). Regarding claim 6, Vassiliev et al. disclose forming a mask on a substrate; forming at least one trench in the substrate by using the mask; in the presence of the mask, selectively forming a first insulation material in a lower part of the trench to fill the at least one trench in the substrate in the lower part and not in the upper part with the insulation material for reducing the aspect ratio of the trench( figure 3 and figure 5); and applying a second insulation material over an entire surface of the structure to fill the at least one trench in the substrate at least up to a top side of the mask (see figure 7b).

### ***Response to Arguments***

Applicant's arguments, see page 5, filed 8/20/08, with respect to the rejection(s) of claim(s) 1-6 under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Vassiliev et al. (US Patent 6,180,490).

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K. Smith whose telephone number is 571-272-1884. The examiner can normally be reached on 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley K Smith/  
Primary Examiner, Art Unit 2894